

Module 5 Lesson Plan

Strategies for Effective Vision Control



Content

Essential Knowledge and Skill 9—10

- Establishing Good Driving Habits
- Understanding Visual Functions
- Overcoming Visual Problems
- The Effect of Speed on Vision
- Techniques to Improve the Vision Fields
- Using the Vehicle Control Sequence
- Discovering Optical Illusions
- Assignment
- Assessment

M5—Strategies for Effective Vision Control



Objective: The student recognizes the value of developing good driving habits and understands basic components of vision and how vision is the first step for gathering information for developing a space management system based on good reduced-risk decision-making.

Instructional Topic	Content	Slide
ESTABLISHING GOOD DRIVING HABITS	<p>Introduce, model, practice and discuss</p> <p>Good driving habits can help minimize or eliminate risky situations</p> <ul style="list-style-type: none"> • Driving habits, like any other skilled performance, are formed by performing a procedure with frequent repetition until the process forms a habit <p>What do these people have in common?</p> <ul style="list-style-type: none"> • Golfers continually practice their swing • Baseball hitters practice their swing at every opportunity • Football quarterbacks constantly practice the art of throwing the ball with precision • Tennis players practice keeping their eye on the ball • Musicians practice using their instruments and reading music • Soccer players practice kicking the ball • Drivers practice good driving habits <p><u>Answer:</u> They all have to practice, practice, practice, to be good. The goal is to go practice proper techniques every time so that good driving habits are formed.</p> <p>Without having to think about it, drivers should automatically drive in a reduced risk, and legal manner. For instance, maintaining a safe following distance, controlling a vehicle through a turn, and knowing how and when to search for potential hazards.</p> <p>Driver decision-making is the result of identifying situations and comparing risks of consequences occurring to the driver or other roadway user.</p> <ul style="list-style-type: none"> • Drivers form judgments from positive as well as negative experiences ... Discuss examples of positive experiences while driving • ... Discuss examples of negative experiences while driving • When good habits and reduced-risk decision-making skills are combined with a courteous attitude, drivers will exhibit competent driving behaviors 	T5-1
<p>◆ The Value of Good Driving Habits</p>	<p>What do these people have in common?</p> <ul style="list-style-type: none"> • Golfers continually practice their swing • Baseball hitters practice their swing at every opportunity • Football quarterbacks constantly practice the art of throwing the ball with precision • Tennis players practice keeping their eye on the ball • Musicians practice using their instruments and reading music • Soccer players practice kicking the ball • Drivers practice good driving habits <p><u>Answer:</u> They all have to practice, practice, practice, to be good. The goal is to go practice proper techniques every time so that good driving habits are formed.</p> <p>Without having to think about it, drivers should automatically drive in a reduced risk, and legal manner. For instance, maintaining a safe following distance, controlling a vehicle through a turn, and knowing how and when to search for potential hazards.</p> <p>Driver decision-making is the result of identifying situations and comparing risks of consequences occurring to the driver or other roadway user.</p> <ul style="list-style-type: none"> • Drivers form judgments from positive as well as negative experiences ... Discuss examples of positive experiences while driving • ... Discuss examples of negative experiences while driving • When good habits and reduced-risk decision-making skills are combined with a courteous attitude, drivers will exhibit competent driving behaviors 	T5-2
<p>◆ How to Create Good Driving Habits</p>	<p>It takes only six steps for positive habit development:*</p> <ol style="list-style-type: none"> 1. Identify the behavior and desire to do it 2. Demonstrate ability to perform the behavior 3. Overcome resistance of "This is the way I do it" 4. Understand and identify when the behavior is performed correctly or incorrectly 5. Practice the behavior correctly at least 28 times 6. Perform the behavior correctly without thought <p>Fred Mottola, 2003. Interactive Driving Systems. Cheshire, CT.</p>	T5-3

Student Learning Activities

Resources



Montana Driver Education and Training



Strategies for
Developing Good
Driving Habits and
Effective Vision
Control



T5-1

M 5

What do they have in common?



T5-2

Six Steps to Positive Habit Development

1. Identify the behavior and desire to do it
2. Demonstrate ability to perform the behavior.
3. Overcome resistance of "this is the way I do it".
4. Understand and identify when the behavior is performed correctly or incorrectly.
5. Practice the behavior correctly at least 28 times.
6. Perform the behavior correctly without thought.



T5-3

Instructional Topic	Content	Slide
<p>◆ Driver Judgment</p>	<p>Like the professional athlete, musician, or driver, one can learn what to do without hesitation on a good judgment level of awareness</p> <ul style="list-style-type: none"> • All drivers can learn how to become efficient and precise; it takes desire to become a good driver • Precision driving does not need to rely upon luck, fate, or maneuvering skill • Drivers tend to feel confident with learned driving habits — especially if there is no crash • When there is a crash, it is usually caused by the "stupid actions of the other driver" • Drivers easily get complacent by the learned style of driving • For example, have you ever had to ride with someone who makes you very uncomfortable? <p>... The driver feels good about his/her driving behavior because the many years of repeated incorrect actions has led to success rather than consequences for failure</p>	<p>T5-4</p> <p>T5-5</p> <p>T5-6</p>
<p>◆ Four Levels of Driver Performance</p>	<p>Due to training and experiences, many drivers operate at different levels of precision performance of skills and reduced-risk decision-making</p> <p>It has been observed that drivers perform at four levels of performance*:</p> <p>Level One Automatic, <u>ok</u> behavior (by habit without thought)</p> <p>Level Two Conscious, <u>ok</u> behavior (with thought)</p> <p>Level Three Conscious, <u>not ok</u> behavior (with thought)</p> <p>Level Four Automatic, <u>not ok</u> behavior (by habit, without thought)</p> <ul style="list-style-type: none"> • Which of these four levels would most likely lead to a crash? ... Level four because the driver is not aware that the action was wrong ... Many drivers operate a vehicle on this level and feel there is nothing wrong with their performance because the appropriate procedure or process has not been learned • Most driving actions take place at Level One or Four • Learning occurs at Levels Two and Three 	<p>T5-7</p> <p>T5-8</p>

Student Learning Activities

Resources



Driver Judgment

Like athletes and musicians, drivers can learn what to do without hesitation on a good judgment level of awareness

- It takes a desire to be a good driver
- Precision driving does not rely on luck, fate, or maneuvering skills



T 5-4

M 5

Driver Judgment

Some drivers think they are good drivers because they don't crash.

When they do crash, it's caused by "the stupid actions of other drivers!"



T 5-5

Driver Judgment

"This driver makes me feel uncomfortable



"I am a very good driver!"



T 5-6

Four Levels of Performance

Driver Awareness Level

Driver Performance Level

Level One	Okay – by habit without thought
Level Two	Okay – with thought
Level Three	Not Okay – with thought
Level Four	Not Okay – without thought



Based on Mottola, F. R. (1999) Empower Yourself, p. 1

T 5-7

Four Levels of Performance

Most Driving Actions Are Here

Most Learning Occurs Here

Level One	Okay – by habit without thought
Level Two	Okay – with thought
Level Three	Not Okay – with thought
Level Four	Not Okay – without thought



Based on Mottola, F. R. (1999) Empower Yourself, p. 1

T 5-8

Instructional Topic	Content	Slide
<p>◆ Four Levels of Driver Performance (Cont.)</p>	<ul style="list-style-type: none"> • The new driver can gain Level One precision performance during driver education course • The goal is to assist students with establishing habits at the first level • The new driver will gain the ability to develop precision operational skills with reduced-risk decision-making habits on an automatic level 	
<p>◆ 10 Good Driving Habits</p>	<p>The goal of this course of instruction is to begin development of good driving behaviors and formation of habits that occur automatically, without conscious thought.</p> <p>This list of habits will help compensate for all the risks that can't be eliminate while driving (Fred Mottola. Interactive Driving Systems. Cheshire, CT.)</p> <ol style="list-style-type: none"> 1. Get driver and vehicle readiness to drive 2. See a clear path before moving the vehicle 3. Keep the vehicle in balance 4. Use reference points to know where your vehicle is 5. Search for line of sight and path of travel restrictions 6. Develop strategies for decision-making and action 7. Safely navigate intersections 8. Control the rear zone 9. Control the front zone 10. Drive with courtesy 	T5-9
<p>VISUAL TESTING</p>	<p>Introduce, model, demonstrate and discuss</p> <p>When applying for an instruction permit a vision test is required. This will be a visual acuity test. A special chart (Snellen Test), used in most eye doctor's offices, is used at the driver's license office.</p> <ul style="list-style-type: none"> • If a driver wears glasses or contact lenses when applying for a Montana license, the license will have a corrective lens restriction <ul style="list-style-type: none"> ... A corrective lens restriction requires the driver to always wear glasses or contacts while operating a vehicle ... Driving privileges could be lost for a period of time for failure to comply with the restriction • Visual acuity is most important for reading road signs, viewing the target area, and identifying hazards <ul style="list-style-type: none"> ... Visual acuity is the measurement of the finest detail which can be seen ... It is the basis for the targeting, and searching tasks 	<p>T5-10</p> <p>T5-11</p>

Student Learning Activities

Resources



M 5

Ten Good Driving Habits

1. Get driver and vehicle readiness to drive
2. See a clear path before moving the vehicle
3. Keep the vehicle in balance
4. Use reference points to know where the vehicle is
5. Search for line of sight and path of travel restrictions
6. Develop strategies for decision-making and action
7. Safely navigate intersections
8. Control the rear zone
9. Control the front zone
10. Drive with courtesy



T 5-8

VISUAL TESTING



Visual Acuity



The top number refers to the distance you stand from the chart (20 feet.) The bottom number indicates the distance at which a person with normal eyesight could read the same line.

For example 20/20 is considered normal. 20/40 indicates that you correctly read letters at 20 feet that could be read by a person with normal vision at 40 feet.

T 5-10



Visual Acuity

An eagle's eye sight is estimated to be at least 50 times more efficient than a human eye. Hunting Eagles can observe their prey from a distance of at least two miles!

How do humans use visual acuity when driving?



T 5-11

VISUAL FUNCTIONS

Student Learning Activities

Resources



M 5



VISUAL FUNCTIONS

About 90 percent of all driving decisions are based on what is seen.

- Drivers must see far enough ahead to make good decisions about speed, lane position, traffic signs, signals, markings, and hazards
- Drivers must see near and far: close enough to read the speedometer, far enough to see the target area



T 5-12

DEPTH PERCEPTION

It takes both eyes to judge distance between two objects.

How do drivers use depth perception?

- Judge gaps
- When approaching a vehicle or obstruction
- When turning or merging
- When passing



T 5-13

Instructional Topic	Content	Slide
<p>◆ Depth Perception (Cont.)</p>	<ul style="list-style-type: none"> • Examples of how depth perception is used when driving include: <ul style="list-style-type: none"> ... Determining following time ... Entering a safe gap in traffic ... Stopping behind a vehicle at an intersection • What are some other examples of depth perception use? <p>Poor depth perception can result in:</p> <ul style="list-style-type: none"> • Stopping too far from the stop line or intersection • Stopping too close to vehicles ahead • Moving into gaps that are too small or looking for gaps that are larger than needed to perform a maneuver • Being unable to follow other vehicles at a safe following distance • Hitting parked cars when parking 	T5-14
<p>◆ Central Vision</p>	<p>The central vision area (known as visual acuity) is used to clearly see something, such as the speed limit numbers on a sign. It is a very small area of human vision — only 3-5 degrees — and even with rapid eye movement, the eyes can focus clearly with central vision</p> <p>Demonstrate central vision Physical Equivalent Practice (PEP)</p> <p>Central vision is used to:</p> <ul style="list-style-type: none"> • See clearly to the target area • Read and identify distinct objects • Form the basis for our visual lead, targeting, and identifying reference points <ul style="list-style-type: none"> • Drivers must actively control central vision because it directs where the intended path of travel will be <ul style="list-style-type: none"> • When a person is tired, drowsy or drunk, central vision is not very active <ul style="list-style-type: none"> ... This could result in difficulty maintaining a path of travel or identifying important information <p><u>Demonstration</u></p> <p>To experience visual acuity, fixate on a single letter in the middle of a line of text. Do not move the eyes (this is harder than most people think), and count how many letters can be read clearly on either side of the letter. Most students report that they can only read about five to seven letters on either side. So to read a page of text, even though the entire page falls on the retina, the eyes must move across the page, successively fixating on different words to be able to see them clearly enough to read them.</p>	T5-15

Student Learning Activities

Resources

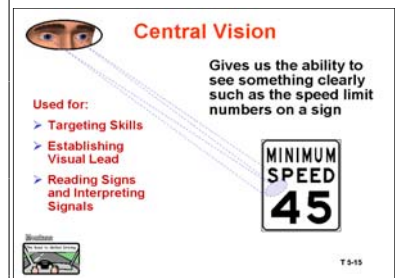


Conduct Depth Perception PEP

Conduct Central Vision PEP



M 5



Instructional Topic	Content	Slide
◆ Fringe Vision	<p>Fringe vision is used to determine where the vehicle is positioned within a lane</p> <ul style="list-style-type: none"> • Fringe vision is used to keep the vehicle on the targeting path • Studies by the military and medical communities estimate the fringe vision is 35 to 38 degrees surrounding the area where the eyes are looking • This visual area lets drivers see all the roadway, problem areas, the vehicle, and the target area from the driver's seat 	T5-16
	<ul style="list-style-type: none"> • Fringe vision is used to: ... see the area around the central vision area 	T5-17
	<ul style="list-style-type: none"> ... judge depth and vehicle position ... see reference points ... develop precision vehicle speed and position adjustments 	T5-18
◆ Peripheral Vision	<p>When driving, the area in front of the vehicle and to the sides must be seen. Human beings have a vision field that permits this. This is called peripheral vision.</p> <ul style="list-style-type: none"> • The normal visual field is 90 degrees to each side of our head (half of a circle) and the fields overlap when both eyes are in use • This vision field is important for identifying moving objects and color • Peripheral vision is limited to the top by the eyebrows, to the bottom by the cheek bones, and to the side by the opening in the iris ... A conical shape around the other vision fields (about 180 —190 degrees with both eyes) 	T5-19
	<ul style="list-style-type: none"> • Peripheral vision varies among individuals and can be improved with training • Peripheral vision may change as the eye responds to light and movements • Sometimes glasses used for correcting central vision can impair peripheral vision areas • At speeds above 40 mph, the driver begins to lose peripheral vision, resulting in what is called "tunnel vision" <p>Fringe and peripheral vision are affected by the speed of a vehicle</p> <p>A common example can be found in auto racing</p> <ul style="list-style-type: none"> • When fringe and peripheral vision are lost drivers must use only their central vision to drive at high speeds on the enclosed race track 	T5-20

Student Learning Activities

Resources



Conduct Fringe Vision PEP

Conduct Peripheral Vision PEP

FRINGE VISION



30 to 45 degrees of useful information

Used for:

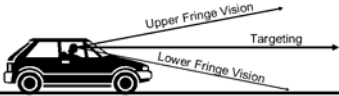
- Seeing reference points
- Keeping drivers on the targeting path
- Helping drivers judge depth and positioning




T 5-18



M 5




Fringe Vision lets drivers see the roadway without looking down



T 5-18


Peripheral Vision



Approximately 90° to each side
Totaling about 180-190°


Used to see

- Moving Objects
- Color Changes




T 5-19

Peripheral Vision Limits



Limited to:

- The top of the eyebrows
- Bottom of the cheeks
- The side by the opening in the iris



T 5-20

Instructional Topic	Content	Slide
<p>◆ Peripheral Vision (Cont.)</p>	<ul style="list-style-type: none"> • In most cases, peripheral vision information is limited to changes in color and in movement • Nighttime peripheral vision is reduced dramatically as colors and movements are muted by lack of light to the retina or by sudden glare <ul style="list-style-type: none"> ... Central and fringe vision fields become more critical when searching for problems at night ... Peripheral vision does not pick up information that is far from the vehicle as compared to daylight <p>Drivers use peripheral vision to:</p> <ul style="list-style-type: none"> • see color changes and object movement • see signal changes • see approaching road signs • see warning lights on the dashboard • see potential hazards and changes in traffic • stay within the lane for short periods of time when the driver is distracted • give the driver an initial warning of a changing or closed zone <p>Poor peripheral vision can result in failing to react to a high-risk situation from the left or right</p> <p>This peripheral vision field is affected by:</p> <ul style="list-style-type: none"> • inattention • fatigue • drugs • poor weather • darkness • speed <p>Poor peripheral vision can be compensated by moving the head and eyes to increase the field of vision</p> <p>Example of how drivers use the three vision fields when a problem comes toward the vehicle from the side</p> <ul style="list-style-type: none"> • The driver first recognizes that something is moving toward the vehicle from the side (peripheral vision) • Fringe vision indicates the size of the vehicle (large, small, car, truck, etc.) • Central vision is used to look at the vehicle to identify the color, make, year, etc. • Review three Visual Fields using transparency T-24 	<p>T5-21</p> <p>T5-22</p> <p>T5-23</p>
<p>OVERCOMING VISUAL PROBLEMS</p> <p>◆ Natural Blind Spots</p>	<p>Introduce, model, demonstrate and discuss</p> <p>Human eyes have a natural blind spot — a small section of the eye near the optic nerve that does not see light</p> <p>Demonstrate the blind spot experiment</p>	<p>T5-24</p>

Student Learning Activities

Resources



Conduct three visual fields PEP

Demonstrate by using two flashlights and showing them on a screen or blackboard. If they are focused together, obvious rings will appear demonstrating the three visual field concepts.

Conduct PEP locating three visual fields

Conduct blind spot experiment:
Look at the "X" with the left eye closed. Move the paper back and forth until you can see the "O." Continue to do the same until the "O" disappears.

Nighttime Peripheral Vision



Reduced Dramatically!

➤ Lack of light to the retina
➤ Sudden glare affects vision

➤ Central and Fringe Vision become more critical when searching for problems

➤ Central Vision is reduced



M 5

Peripheral Vision



How do drivers use peripheral vision?

- See color and object movement
- See signal changes, road signs, warning lights on the dashboard
- Monitor traffic
- Stay within the lane



T 5-22

Peripheral Vision



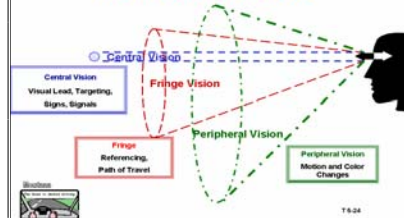
Peripheral Vision is affected by:

- inattention
- fatigue
- drugs
- poor weather
- darkness
- speed



T 5-23

The Three Visual Fields



T 5-24

Instructional Topic	Content	Slide
<p>◆ Visual Acuity</p>	<p>Poor visual acuity can be compensated for by wearing glasses or contact lenses prescribed by an ophthalmologist or optometrist</p> <ul style="list-style-type: none"> • The driver could be limited to daylight driving, or restricted to driving time and routes • Some older drivers are trained to use fringe vision to compensate for central vision deficiencies due to disease or illness 	T5-25
<p>◆ Depth Perception</p> <p>—Compensation Techniques</p>	<p>To compensate for depth problems and judging how far away something is, a driver needs to use time to establish distance</p> <p>Compensate for poor depth perception:</p> <ul style="list-style-type: none"> • The driver can count four seconds and keep an adequate following distance • The same technique could be used at intersections — if the driver needs 12 seconds to pull into traffic flow, then the driver can count the seconds as a car approaches to learn the size of the gap in traffic 	
<p>◆ Color Blindness</p> <p>—Compensation Techniques</p>	<p>Red and green are the most common color blindness problems</p> <p>Compensate for color blindness:</p> <ul style="list-style-type: none"> • Know the shapes and meaning of all traffic signs and memorizing the sequence and order of the traffic signal lights will help compensate for the inability to distinguish colors • Traffic signs and signals use color, consequently, drivers can compensate by memorizing the order of the traffic signal lights • Vertical lights have the red light on top, green on the bottom • Horizontal lights have the red light on the left • Flashing pedestrian crossing lights forewarn the driver of the change from green to yellow <p>Even with good daytime vision, seeing clearly at night might be difficult. Night vision may only indicate shadows or outlines. When looking at a bright light such as a headlight, night vision can be reduced temporarily</p>	
<p>◆ Night Blindness</p>	<p>Night vision is restricted to what can be seen with:</p> <ul style="list-style-type: none"> • headlights, which gives you a more narrow width of view • streetlights, which have limited brightness • other lights such as houses, businesses, etc. <p>Humans do not have the same ability as nocturnal animals, such as owls who can open their irises wider than humans to give them better night vision</p>	T5-26

Student Learning Activities

Resources



OVERCOMING VISUAL PROBLEMS

How can a driver overcome problems with

- Visual Acuity
- Depth Perception
- Color Blindness



T 5-25

M 5



Human's Night Vision
Doesn't Compare to
Nocturnal Animals

So extraordinary is an owl's night vision, it can spot a mouse creeping through the underbrush more than a football field away on a moonless night



T 5-26

Instructional Topic	Content	Slide
<p>◆ Night Blindness (Cont.)</p>	<p>Poor night vision can cause:</p> <ul style="list-style-type: none"> • slow reaction to hazards in front of the vehicle • inadequate following distance resulting in tailgating • failure to steer in the proper direction when necessary to avoid low-contrast road features such as the edge of the roadway or other irregularities in the road surface • poor peripheral vision—objects to the side are more difficult to see • difficulty seeing signs, signals, markings 	
<p>—Compensation Techniques</p>	<p>Compensate for reduced night vision by:</p> <ul style="list-style-type: none"> • reducing speed • increasing following distance • using the headlights of other vehicles to see more clearly • keeping headlights and windows clean • not looking at the headlights of approaching vehicles—reduce speed and look to the right side of the road as the vehicle approaches, using frequent quick glances to maintain path of travel • not wearing sun glasses at night 	T5-27
<p>◆ Glare</p>	<p>Glare is an intense and blinding light—that can occur during the day or night</p> <p>During daylight, glare can be caused by:</p> <ul style="list-style-type: none"> • bright sunlight, especially during rising and setting suns • reflection hitting windows, roads, etc. • scratched or broken windshields • Items placed on the dashboard <p>Glare can result in:</p> <ul style="list-style-type: none"> • a driver not seeing a curve in the road • crashing into the rear of a slow-moving, stopped, or stalled vehicle • not seeing an approaching vehicle or pedestrian • failure to see traffic signs, signals, markings <p><u>Glare resistance</u> is the extent to which a driver can still see objects and events while facing a steady glare such as the setting sun or light from oncoming vehicles</p> <p><u>Glare recovery</u> is the speed with which a driver's vision returns to normal after being exposed to glare</p> <ul style="list-style-type: none"> • Glare resistance and recovery are important for being able to drive safely during sunset or at night 	T5-28

Student Learning Activities

Resources



M 5

Overcoming Night Vision Problems

Compensate for reduced night vision by:

- reducing speed
- increasing following distance
- using the headlights of other vehicles to see more clearly
- keeping headlights and windows clean
- not looking at the headlights of approaching vehicles
- not wearing sun glasses at night



T 5-27

How can GLARE like this affect driving?



T 5-28

Instructional Topic	Content	Slide
—Compensation Techniques	<p>Compensate for glare by:</p> <ul style="list-style-type: none"> • keeping sunglasses in the vehicle • using a greater following distance • avoiding looking at the headlights of oncoming vehicles by looking at the right edge of the roadway • using the sun visor and adjusting it properly • squinting • reducing speed until vision returns • communicating with others <p>Remember: if the driver can't see, other road users probably can't see either!</p>	T5-29
◆ Other Factors Affecting Vision	<p>Additional factors that affect driver vision include:</p> <ul style="list-style-type: none"> • distractions • inattention • fatigue • illness/disease • emotions • age • alcohol and other drugs 	T5-30
The Effect of Speed on Vision	<p>As speed increases, the amount of information needed to maintain car position and detect movement also increases</p> <ul style="list-style-type: none"> • drivers have less time to see and make decisions • peripheral vision becomes blurred and distorted • even minor changes to lane position occur much more quickly causing significant or dangerous exaggerated vehicle movements 	T5-31
◆ Time to Respond	<p>As speed increases, more time is needed to gather information by extending central vision to the target area</p> <ul style="list-style-type: none"> • active vision search must be increased to allow for motion detection farther away from the vehicle in order to allow time for an adequate response • allow for more space between other vehicles, so abrupt responses are held to a minimum 	

Student Learning Activities

Resources



Overcoming Night Vision Problems

Compensate for glare by:

- Keeping sun glasses in the vehicle
- Using a greater following distance
- Avoiding looking at headlights
- Adjusting and using the sun visor
- Squinting may help
- Reducing speed until vision returns
- Communicating with others



T 5-29

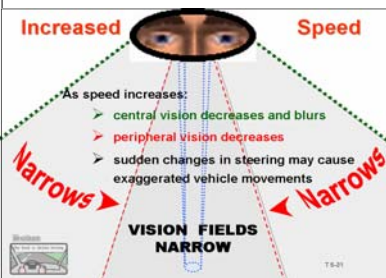
M 5

The Effect of Speed on Vision

- As speed increases drivers need more time to gather information to maintain car position and detect movement
- Drivers have less time to see and make decisions
- Peripheral vision becomes blurred and distorted



T 5-30



T 5-31

Instructional Topic	Content	Slide
<p>◆ Time to Respond (Cont.)</p>	<p>Peripheral vision is reduced tremendously as speed increases</p> <ul style="list-style-type: none"> • 25 percent ineffective at 30 mph • 50 percent ineffective at 50 mph • 90 percent ineffective at 70 mph • ineffective at 90 mph or above <p>... Car motion overcomes ability for the eyes to pick up information</p> <p>... Speed does not allow time for effective use of peripheral vision inputs</p>	
<p>TECHNIQUES TO IMPROVE THE VISION FIELDS</p>	<p>Introduce, model, practice and discuss</p> <p>To ensure good vision from within the vehicle:</p> <ul style="list-style-type: none"> • clean inside and outside windows • clean and ensure lights work • check to ensure the defroster and wiper blades are in good working order • check the washer fluid container • remove any stickers, signs or objects that interfere with vision <p>... rear view mirror ornaments</p> <p>... objects in the rear window area</p> <p>... objects on the front dash area</p> <ul style="list-style-type: none"> • properly adjust mirrors to improve vision to the rear and sides of the vehicle • keep available: sunglasses, flashlight, windshield scraper 	T5-32
<p>USING THE VEHICLE CONTROL SEQUENCE</p> <p>◆ Vision Control</p>	<p>Introduce, model, demonstrate and discuss</p> <p>Modern vehicle technology and suspensions are designed to move the vehicle to where the vehicle is pointed.</p> <p>It is crucial to have a solid link between where the vehicle is and where it needs to go in order to point it in the proper direction</p> <ul style="list-style-type: none"> • The driver provides that link for determining the speed control and position movement of the vehicle • The driver must make reduced-risk decisions to maintain vehicle position toward the path of travel • When the line of sight is reduced, speed must be reduced until the visual line of sight is restored 	T-33

Student Learning Activities

Resources



M 5

Techniques to Improve the Vision Fields



- Clean windows – inside and out
- Clean the lights – be sure they work
- Be sure the defroster and wiper blades are in good working order
- Remove any objects that interfere with vision
- Adjust mirrors properly
- Have on hand: sunglasses, flashlight, windshield scraper



T 5-32



Vision Control



Motion Control



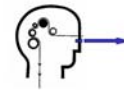
Steering Control

T 5-33

Instructional Topic	Content	Slide
◆ Vision Control (Cont.)	<p>To develop the vehicle control sequence, the driver must use central vision to determine where the vehicle needs to be in the target area</p> <ul style="list-style-type: none"> The driver must use central vision to understand where the vehicle is in time and space ... Without the relationship between present position and the targeting area, the driver will make speed control and steering errors The driver must have vision control before any speed adjustments can be made 	T5-33
◆ Motion Control	<p>Motion control is the physical part of changing vehicle speed by the use of the accelerator or brake</p> <ul style="list-style-type: none"> Precision speed adjustments (acceleration/deceleration) can only be made when relating the target to where the vehicle is on the roadway 	
◆ Steering Control	<p>Effective steering control relies first on vision control. The brain interprets what the driver sees and the driver responds by smooth steering actions</p> <ul style="list-style-type: none"> Too much acceleration/deceleration affects the amount of steering input needed <p>During a panic reaction drivers typically reverse these critical maneuvers to:</p> <ol style="list-style-type: none"> Steering control Motion control Vision control <p>How does this affect vehicle control?</p>	T5-34
DISCOVERING OPTICAL ILLUSIONS	<p><u>Optical Illusion Demonstrations</u></p> <p>An optical illusion occurs when what is seen is not a physical reality. A magician knows how to use illusions to trick people into believing something can disappear right before our eyes.</p> <ul style="list-style-type: none"> There are many types of illusions. Some are by size, shape, direction, motion, or perspective. What happens when optical illusions are experienced is not entirely known. Scientists are fascinated by illusions because by figuring out how the eye and brain can be tricked, they can better understand the normal workings of the visual system. Optical illusions remind people that what is seen is also a product of the mind. Since about 90 percent of decision-making is based upon what is seen, drivers need to train the eyes and brain to recognize and interpret accurate information How can reference points help overcome optical illusions? 	

Student Learning Activities

Resources



Vision Control



Motion Control



Steering Control

TS-02

M 5

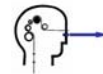
Panic!



Steering Control



Motion Control



Vision Control

TS-04

Instructional Topic	Content	Slide
<div data-bbox="191 430 430 499">ASSIGNMENT</div>		
<div data-bbox="191 682 430 751">ASSESSMENT</div>		

Student Learning Activities

Resources



M 5